

REMARKS

Amendments

Claim 1 is amended to incorporate the recitation of claim 10. Claim 7 is amended to be consistent with the language of amended claim 1. Claims 8-11 are cancelled. New claims 12-17 are directed to further aspects of the invention and are supported throughout the disclosure. See, for example, paragraphs [0012] and [0028]-[0035], and the Figures.

Rejection under 35 USC 102(b)

Claims 1, 2, and 9 are rejected under 35 USC 102(b) as being anticipated in view of Knaus (US 5,190,706).

Knaus (US '706) discloses a process for extrusion of heat-plastified foamable gels of a thermoplastic resin or resins containing blowing agents. In the process two melt streams are combined and simultaneously extruded through the same orifice of a die into a zone of lower pressure where the foamable gels are expanded into a foam, i.e. a cellular body. See column 2, lines 38-44, and column 5, lines 15-29.

See, for example, Figure 3, wherein admixtures, in the form of gels, are fed into die 30a where they are combined and extruded through die orifice 32a into a zone of lower pressure, such as the atmosphere, where the gels expand to form a cellular body. Passages 34a and 34b communicate with the die 30a and deliver the admixtures from extruders 11a and 11b (See Figure 1) to die 30a. A flow of extrudate flows past a spider 38 and around die mandrel 39 allowing a tubular extrudate to flow out of die orifice 32a. As shown in Figures 4A and 4B, this tubular extrudate 80 has a stripe 82 of foam on its surface as a result of the gel from passage 34b. See column 5, lines 15-48.

Knaus (US '706) does not disclose a process involving a polymer mass containing polyvinyl butyral. Moreover, since the material formed by the extrusion process of Knaus (US '706) is a foam, the material is not a film that is suitable for use as an intermediate layer in laminated glazing.

In view of the above remarks, it is respectfully submitted that the disclosure of Knaus (US '706) fails to anticipate applicants' claimed invention. Withdrawal of the rejection is

respectfully requested.

Rejection under 35 USC 103(a) in view of Knaus and Schuchardt

Claim 3 is rejected under 35 USC 103(a) as being obvious in view of Knaus (US 5,190,706) and Schuchardt (US 2002/0067656). This rejection is respectfully traversed.

The disclosure of Knaus (US '706) is discussed above. Schuchardt (US '656) disclose a dynamic mixer comprising at least one housing with two or more inlets for the mixing components, an outlet, a shaft with screw threads and a drive means for the rotation of the shaft. Within the housing, the mixer has a mixing zone in which the internal wall of the housing is provided with grooves that are oppositely directed from the screw threads on the shaft.

In the rejection, it is argued that it would be obvious to use the dynamic mixer of Schuchardt (US '656) in place of the static mixers of Knaus (US '706). See mixing elements 61a and 61b in Figure 5.

The disclosure of Schuchardt (US '656) does not overcome the deficiencies in the disclosure of Knaus (US '706) discussed above. Thus, neither Schuchardt (US '656) nor Knaus (US '706) disclose or suggest a process involving a polymer mass containing polyvinyl butyral, or a film exhibiting a tinted strip that is suitable for use as an intermediate layer in laminated glazing.

In view of the above remarks, it is respectfully submitted that the disclosure of Knaus (US '706), taken alone or in view of the disclosure of Schuchardt (US '656), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Knaus and Postavnichev et al.

Claims 4-5 are rejected under 35 USC 103(a) as being obvious in view of Knaus (US 5,190,706) and Postavnichev et al. (US 4,096,069). This rejection is respectfully traversed.

The disclosure of Knaus (US '706) is discussed above. Postavnichev et al. (US '069) disclose a filter for polymer melts. The filter has a casing with an inlet opening, an outlet opening and a hollow mandrel that supports filter elements. These filter elements are axially fixed by means of clamping flanges, and each element consists of a spacer plate located between

filtering baffles. See, e.g., column 6, lines 8-30 and Figure 1.

In the rejection, it is argued that it would be obvious to use the filters of Postavnichev et al. (US '069) in the system of Knaus (US '706).

However, the disclosure of Postavnichev et al. (US '069) does not overcome the deficiencies in the disclosure of Knaus (US '706) discussed above. Neither Postavnichev et al. (US '069) nor Knaus (US '706) disclose or suggest a process involving a polymer mass containing polyvinyl butyral, or a film exhibiting a tinted strip that is suitable for use as an intermediate layer in laminated glazing.

In view of the above remarks, it is respectfully submitted that the disclosure of Knaus (US '706), taken alone or in view of the disclosure of Postavnichev et al. (US '069), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Knaus and Esposito et al.

Claims 6 and 10-11 are rejected under 35 USC 103(a) as being obvious in view of Knaus (US 5,190,706) and Esposito et al. (US 4,316,868). This rejection is respectfully traversed.

The disclosure of Knaus (US '706) is discussed above. Esposito et al. (US '868) disclose a process for extrusion of a pellucid or transparent sheet of thermoplastic polymer wherein the sheet has a gradient color band incorporated therein. The process can be used to produce a polyvinyl butyral interlayer for use in automobile windshields. See column 1, lines 27-31 and column 2, lines 22-25.

The process of Esposito et al. involves extruding a sheet through a slit die orifice. See, for example, Figures 2-3 and reference numeral 9. Polymer melt is brought to the slit die orifice via manifold 6 and extrusion passage 7. In addition, positioned within manifold 6 is a torpedo-shaped probe 1. The axis of the probe is parallel to the slit die orifice. The probe is provided with a wedge-shaped extrusion orifice extending parallel to the probe axis for less than half the width of extrusion passage 7.

During extrusion, a main flow of molten thermoplastic polymer is fed to the manifold and a colored secondary flow of the same polymer is simultaneously fed to the probe. The main

polymer, as it passes by the wedge-shaped orifice in the probe, flows above and below the probe in streams that are substantially parallel and in the direction of extrusion. This results in a layer of colored polymer (10), discharged from the wedge-shaped orifice of the probe, being encapsulated in the main flow of molten flow of polymer. As the combined flows through the slit die orifice, a sheet with a gradient color band is produced.

In the rejection, it is argued that it would be obvious to modify the process of Knaus (US '706) so as to extrude "at least one of Knaus's stream through a die with a wedged-shaped or torpedo-shaped partial area" in light of the disclosure of Esposito et al. (US '868). Applicants' disagree.

As noted above, the process of Knaus (US '760) is directed to a process for extruding foamable thermoplastic resin containing blowing agents. The extrusion die used by Knaus (US '760) has an annular die orifice 32 in which is positioned a spider nose 37, a spider 38, and a mandrel 39. During the extrusion, extruded material, i.e., the combined polymer melts, "flows past spider nose 37, forming a tubular flow of extrudate which flows past spider 38 and around the mandrel 39." See column 5, lines 20-34 and Figure 3. The resultant extrudate forms a tube 80 as it exits 32a and expands to 1 to 4 times the annular die orifice.

Thus, the annular shaped die of the Knaus process permits the extrusion of a tube of foamable thermoplastic which, since it is extruded into a zone of lower pressure, can freely expand to form a larger diameter tube of foamed material. The extrusion process of Esposito et al. (US '868) is very different in that it extrudes thermoplastic material in the shape of a sheet, rather than a tube, and also is not directed to the extrusion of foamable materials, but is instead directed to the extrusion of transparent materials.

One of ordinary skill in the art would not look to Esposito et al.'s (US '868) process of extruding transparent materials in sheet form through a slit die in order to modify the Knaus's (US '760) process of extruding tubes of foamable thermoplastic materials through an annular die. Furthermore, the disclosure of Esposito et al. (US '868) provides no suggestion of using a wedged-shaped or torpedo-shaped probe in conjunction with an annular shaped die such as used in the process of Knaus (US '706).

In view of the above remarks, it is respectfully submitted that the disclosure of Knaus

(US '706), taken alone or in view of the disclosure of Esposito et al. (US '868), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Knaus

Claims 7-8 are rejected under 35 USC 103(a) as being obvious in view of Knaus (US 5,190,706). This rejection is respectfully traversed.

As discussed above, Knaus (US '706) does not disclose or suggest a process involving a polymer mass containing polyvinyl butyral. Knaus (US '706) also does not disclose or suggest a film exhibiting a tinted strip that is suitable for use as an intermediate layer in laminated glazing.

In view of the above remarks, it is respectfully submitted that the disclosure of Knaus (US '706) fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Esposito et al. and Knaus

Claims 1, 6, 7, and 9-11 are rejected under 35 USC 103(a) as being obvious in view of Esposito et al. (US 4,316,868) and Knaus (US 5,190,706). This rejection is respectfully traversed.

The disclosures of Esposito et al. (US '868) and Knaus (US '706) are discussed above. Esposito et al. (US '868) disclose a process involving a main flow of molten thermoplastic polymer fed to the manifold and a colored secondary flow of polymer, fed to a torpedo-shaped probe within the manifold. Esposito et al. (US '868) do not describe how these two flows are obtained or how they are to be separately treated.

The processes of Esposito et al. and Knaus are strikingly different. The Esposito et al. process involves the use of a slit die orifice to make a transparent sheet, whereas the Knaus process involves an annular die orifice for making a tube of foamed material. One of ordinary skill in the art would not look to the Knaus's (US '760) process of extruding tubes of foamable thermoplastic materials through an annular die in order to modify Esposito et al.'s (US '868) process of extruding transparent materials in sheet form through a slit die. Combining these two disparate extrusion processes involves impermissible hindsight reconstruction.

In view of the above remarks, it is respectfully submitted that the disclosure of Esposito et al. (US '868), taken alone or in view of the disclosure of Knaus (US '706), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Esposito et al., Knaus, and Schuchardt

Claims 2-3 are rejected under 35 USC 103(a) as being obvious in view of Esposito et al. (US 4,316,868), Knaus (US 5,190,706), and Schuchardt (US 2002/0067656). This rejection is respectfully traversed.

The disclosures of Esposito et al. (US '868), Knaus (US '706), and Schuchardt (US '656) are discussed above. The disclosure of Schuchardt (US '656) does not overcome the deficiencies in the combination of Esposito et al. (US '868) and Knaus (US '706) discussed above.

In view of the above remarks, it is respectfully submitted that the disclosure of Esposito et al. (US '868), taken alone or in view of the disclosures of Knaus (US '706) and/or Schuchardt (US '656), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Esposito et al., Knaus, and Postavnichev et al.

Claims 4-5 are rejected under 35 USC 103(a) as being obvious in view of Esposito et al. (US 4,316,868), Knaus (US 5,190,706), and Postavnichev et al. (US 4,096,069). This rejection is respectfully traversed.

The disclosures of Esposito et al. (US '868), Knaus (US '706), and Postavnichev et al. (US '069) are discussed above. The disclosure of Postavnichev et al. (US '069) does not overcome the deficiencies in the combination of Esposito et al. (US '868) and Knaus (US '706) discussed above.

In view of the above remarks, it is respectfully submitted that the disclosure of Esposito et al. (US '868), taken alone or in view of the disclosures of Knaus (US '706) and/or Postavnichev et al. (US '069), fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103(a) in view of Esposito et al., Knaus, and McCombie

Claim 8 is rejected under 35 USC 103(a) as being obvious in view of Esposito et al. (US 4,316,868), Knaus (US 5,190,706), and McCombie (US 3,388,034). This rejection is respectfully rendered moot by the cancellation of claim 8. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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